

What is claimed is:

1. A gasket assembly for a fuel cell stack provided with at least one bipolar plate, a plurality of parallel gas channels being formed on a surface of the bipolar plate and the gas channels being communicated with a gas passage via a plurality of communication channels spaced from each other with a partition, comprising:

at least one reception region located on a top surface of the communication channels, the width of the reception region at a direction perpendicular to a longitudinal extending direction of the communication channels being larger than the total width of the communication channels; and

a pressure resistant packing located in the reception region.

2. The gasket assembly as claimed in claim 1, wherein when the pressure resistant packing is located in the reception region, a top surface of the pressure resistant packing forming a smooth and flat plane with a ridge of each partition outside the reception region.
3. The gasket assembly as claimed in claim 1, wherein the pressure resistant packing is made of hard polymer.
4. The gasket assembly as claimed in claim 1, wherein the bipolar plate is a cathode bipolar plate of the fuel cell stack.
5. The gasket assembly as claimed in claim 1, wherein the bipolar plate is an anode bipolar plate of the fuel cell stack.
6. A fuel cell stack comprising at least one cell unit, each cell unit comprising:

a membrane electrode assembly having an anode side and a cathode side;

an anode bipolar plate mounted on the anode side of the membrane electrode assembly, provided with a gasket interposed between the anode bipolar plate and the membrane electrode assembly;

a cathode bipolar plate mounted on the cathode side of the membrane electrode assembly, provided with a gasket interposed between the cathode bipolar plate and the membrane electrode assembly;

at least one gas passage which is formed in the fuel cell stack, the gas passage being communicated with a plurality of channels formed on the anode bipolar plate and the cathode bipolar plate via a plurality of communication channels for separately conveying hydrogen gas and air to the anode bipolar plate and the cathode bipolar plate; and

at least one pressure resistant packing located on a top of each communication channel.

7. The fuel cell stack as claimed in Claim 6, wherein the communication channels are formed with a reception region on the top of each communication channel for locating the pressure resistant packing.
8. The fuel cell stack as claimed in Claim 7, wherein the reception region has a width larger than a total width of the communication channels and partitions, the width of the reception region being perpendicular to the longitudinal extending direction of the communication channels, the reception region comprising the partitions within the reception region forming a recess for locating the pressure resistant packing thereon.
9. The fuel cell stack as claimed in Claim 7, wherein the pressure resistant packing has a predetermined thickness so that when it is mounted in the reception region, a top surface of the pressure resistant packing forms a smooth and flat plane with ridges of the partitions outside the reception region.

- 10 The fuel cell stack as claimed in Claim 6, wherein the pressure resistant packing is made of hard polymer.
11. The fuel cell stack as claimed in Claim 6, wherein the pressure resistant packing is located on the communication channels between an air inlet port of the cathode bipolar plate and the air channels at a central part of the cathode bipolar plate.
12. The fuel cell stack as claimed in Claim 6, wherein the pressure resistant packing is located on the communication channels between an air outlet port of the cathode bipolar plate and the air channels at the central part of the cathode bipolar plate.
13. The fuel cell stack as claimed in Claim 6, wherein the pressure resistant packing is located on the communication channels between a hydrogen gas inlet port of the anode bipolar plate and the hydrogen gas channels at a central part of the anode bipolar plate.
14. The fuel cell stack as claimed in Claim 6, wherein the pressure resistant packing is located on the communication channels between a hydrogen gas outlet port of the anode bipolar plate and the hydrogen gas channels at a central part of the anode bipolar plate.